CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: July 5, 2002

TO: Members, Natural Resources Board

FROM: Darrell Bazzell

SUBJECT: Update on the Crandon Mine Project

You had requested an update of our review of the proposed Crandon Mine. I will try and be brief and summarize the status of the major detailed analyses that are currently being finalized on the project. Most of the major work products for the project are in the final analysis stages. Staff remains optimistic that the Department's analysis and verification of Nicolet Minerals Company (NMC) proposals and submissions can be completed by the end of summer and that the Draft Environmental Impact Statement (DEIS) can be released in early 2003.

Reflooded Mine Management Plan (RMMP): The central responsibility for the department is to assess changes in groundwater quality and ensure the protection of groundwater in areas adjacent to the mine after it is closed and reflooded. NMC has submitted a RMMP that it believes will protect groundwater extending out over hundreds of years or more. The plan includes a series of engineering controls to minimize the generation and release of solutes from the reflooded mine. Further, they propose a range of contingencies that can be implemented in the event that water quality concerns emerge—including a perpetual "pump-and-treat" option. It should be noted that this option is a contingency and not the primary means by which NMC proposes to meet applicable groundwater standards. Late last year the Department had requested—and NMC has now agreed to complete—some sensitivity analyses on the RMMP geochemical source term to better define the scope of possible groundwater quality issues related to the mine. We expect to receive NMC's analysis by July 1, 2002 and will complete our work on the RMMP solute transport model following the submission. We are also nearing completion of our work on the RMMP solute transport model, and should be ready to incorporate our estimates of the source term into the transport model at the time they are complete.

Tailings Management Area (TMA) Issues: The major task for NMC and DNR is to evaluate the amount and geochemistry of leakage from the tailings management area—which amounts to a highly engineered landfill for the placement of mine process tailings. The main work product is the Groundwater Quality Performance Evaluation (GWQPE). Key questions: What is the geochemistry of the tailings in the TMA (or waste characterization) and how do these chemicals behave in the TMA? How much leachate will be generated from the TMA? Finally, if solutes are released to groundwater from the TMA, where do they go, what concentrations are expected and will they reach the boundary of the Design Management Zone? The information on solute movement from the TMA is used as an input to the TMA solute transport model, from which our predictions of groundwater concentration through time are made. At issue late last year was the level of predicted infiltration (from rain, snow melt, etc.) through the TMA cap after closure—which is not a trivial issue given the TMA's 150-acre footprint. If water is infiltrating through the TMA's cap, it is assumed to exfiltrate out the bottom. The concern is the additional potential transport of solutes/potential contaminants and how to model and predict its impact. NMC has agreed to a contingency to implement an additional (or secondary) cap on the TMA if monitoring shows that it is necessary to limit infiltration. Final completion of the solute transport modeling work is contingent on completion of our predicted source term, which is expected mid-summer.

Groundwater Flow Modeling and Mine In-Flow: An earlier version of our groundwater modeling showed a probable possible mine in-flow of 600 gpm to 1580 gpm. In 2000 and through 2001, the Department worked with NMC on the potential for modeling the impacts of the proposed grout program to address mine in-flow—which existing models did not fully represent. In late 2001, in-flows were modeled within a range to assess the ability of the mine to meet a 600 gpm mine in-flow permit guarantee that NMC reached with the Town of Lincoln. (Our models predict potential mine in-flows in the range of 300-1250 gpm; however, the professional judgment of our team concludes that the lower end of the range is achievable with the contingent implementation of an aggressive grout program to comply with the 600 gpm limit.) The final modeling work is nearly complete, and no significant additional information is pending from NMC.

Surface Water Mitigation Plan: The project is likely to cause impacts to surface waters in the area, and state mining laws require the company to evaluate potential impacts to those impacted water bodies and take steps (consistent with the probability of their occurrence) to mitigate those effects—generally, this would require returning water of a similar composition to the affected waterbody. Once the mine in-flow issue was resolved and Department agreed in principle with a 600-gpm pumping limit, the predicted number of lakes/streams impacted and the extent of the impacts narrowed. This is no longer a major issue and the plan is being finalized.

Mole Lake Tribe "Treatment as a State" and Water Quality: The US Supreme Court recently declined to hear our appeal in the case, State of Wisconsin v. EPA and the Sokagoan Chippewa Community. At issue was whether EPA was empowered by the Clean Water Act to treat the Mole Lake tribe as a "state" for purposes of certain water quality rules. The case clears the way for the Mole Lake to maintain water quality standards for navigable waters that flow through the reservation. Swamp Creek is likely to be the primary surface water body at issue since it flows westward through the proposed Crandon Mine site before entering the Mole Lake reservation. The only discharge to surface waters entering the Mole Lake reservation is mitigation water--water added to maintain minimum stream flows. Only one stream, a tributary of Swamp Creek, is perceived as probably needing the addition of mitigation water. NMC has publicly stated that it will have no difficulty meeting the tribe's water quality standards with its mitigation water.

Mining Moratorium Statute: 1997 Act 171 added a statutory provision (s. 293.50) that requires mining permit applicants to submit candidate sulfide mine(s) from the US or Canada that has/have:

- Operated for at least ten years without polluting groundwater or surface water from its tailings or mine sites or from release of heavy metals.
- Been closed for at least ten years without polluting groundwater or surface waters from the tailings or mine site or from the release of heavy metals.

The company has submitted candidate mines in Canada (closed for 10 years); California (operated for 10 years), and Arizona (operated for 10 years and closed for 10 years). The Department sent NMC a letter dated May 31, 2002 (from Larry Lynch) concluding that the Arizona mine (the Sacaton Mine) does not meet the statutory standard because "there is simply not enough information from which to draw any conclusion regarding the mining site's performance in the period following closure." NMC does not agree with the conclusions in the letter and will replying to it soon. The conclusion on Sacaton is not fatal to the project if the other two candidate mines meet the statutory standard.

Irrevocable Trust: In December 1999, a revision to the mining administrative code (NR 132) was enacted to create an irrevocable trust fund to be maintained in perpetuity to cover the cost of a range of events that could be damaging to the environment near the mine. NMC is continuing to work on its plan to meet the

rule requirement, but (by prior mutual agreement with DNR) it will likely not be submitted until after the draft environmental impact statement is released.

Science Advisory Council on Metallic Mining: By Executive Order #309 in 1997, Governor Thompson created the council to review technologies that are effective in preventing or eliminating environmental degradation from metallic ore mining operations, including technologies being applied at the Crandon project. The five-member Council has been meeting periodically since 1997 and is expected to produce a draft report by September 15, 2002. The final report will become part of the public record on the project but will be released independent of the draft and final EIS's.

This summary represents only the major issues and work products on the project. There are several others that are in process and, while essential to the permit application, are more routine approvals and analyses. Please let me know if you'd like to discuss this further. Thank you.

Bcc: Franc Fennessy, AD/5
Charles Hammer, LC/5
Melissa DeVetter, SS/7
Larry Lynch, WA/3
Chris Carlson, WA/3
Ken Markart, NOR-Rhinelander
George Albright, SS/7